SYSTEM AND METHOD FOR RATE ADAPTATION OF A MULTIRATE VOCODER

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- WO9803030
- FR2718906
- WO9622639
- GB2306867

Abstract of WO9960742

The present invention includes a time-division-multiple-access (TDMA) communication system having a base station and at least one mobile station, each transmitting and receiving an analog radio-frequency signal carrying digital coded speech. The speech is encoded using a vocoder which samples a voice signal at variable encoding rates. During periods when the radio-frequency channel is experiencing high levels of channel interference, the encoded voice channel having a lower encoding rate is chosen. This low-rate encoded voice is combined with the high degree of channel coding necessary to ensure reliable transmission. When the radio-frequency channel is experiencing low levels of channel interference, less channel coding is necessary and the vocoder having a higher encoding rate is used. The high-rate encoded voice is combined with the lower degree of channel coding necessary to ensure reliable transmission. The appropriate levels of channel coding necessary for reliable transmission are determined by various channel metrics, such as frame erase rate and bit error rate. The determination of the appropriate vocoder rate and level of channel coding for both the uplink and downlink may be determined centrally at the base station, with the vocoder rate and level of channel coding for the uplink being relayed to the mobile station. Alternatively, the appropriate vocoder rate and level of channel coding for the downlink may be determined by the mobile station, and the appropriate vocoder rate and level of channel coding for the uplink may be determined by the base station.

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